

E x c e r p t s f r o m :

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CALIFORNIA WELLHEAD PROTECTION PROGRAM

June 2, 1997

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Included in this excerpt are portions of the WellHead Protection Program that are not part of the Source Water Assessment Program (e.g. Roles and Duties of State and Local Agencies, WellHead Protection Area Delineations, Inventory of Source Contaminants, Assess Vulnerability of Water Supply to Contamination, and Public Involvement in the State Process).

California WellHead Protection Program

PROGRAM SUMMARY AND DESCRIPTION

Definition of WellHead Protection

WellHead Protection means managing the land area around a well (and/or its recharge area) to prevent contamination of the ground water supply. To protect a well supply you must delineate the area that contributes ground water to the well, identify the existing and potential sources of contamination within that area, and manage activities within that area to prevent pollution of the ground water.

Goals of the California WellHead Protection Program

By establishing a statewide WellHead Protection Program (WHPP), California intends to:

- **Encourage a proactive approach to protecting ground water sources of drinking water.** Water suppliers, communities, planners and the public at large will be encouraged to actively manage and plan activities around wells and their recharge areas to reduce or eliminate the threat of contamination.
- **Refine/focus/target the monitoring requirements for drinking water sources.** State and federal regulations require water suppliers to monitor for a long list of inorganic and organic chemicals. With proper identification of contaminant sources, monitoring requirements can be targeted to the needs of the source. The result is enhanced public health protection with a potential saving in monitoring costs.
- **Meet federal requirements for establishing WellHead Protection and Source Water Assessment Programs.** Amendments to the Safe Drinking Water Act in 1986 required each state to develop a WellHead Protection Program. The 1996 Amendments required each state to develop a Source Water Assessment program. A WellHead Protection Program should be an important component of a Source Water Assessment Program.

The Importance of WellHead Protection

- About half of domestic drinking water supplies in California come from ground water. Many communities rely entirely upon ground water for drinking water supplies, especially in rural areas. Protecting this supply is of paramount importance for the health of residents and the economic well-being of communities.

Requirement and/or Authority for Development of a California WellHead Protection Program

The 1986 Amendments to the Safe Drinking Water Act (SDWA) established a new WellHead Protection (WHP) Program to protect ground waters that supply wells and wellfields that contribute drinking water to public water supply systems. Under SDWA Section 1428, each State was required to prepare a WellHead Protection Program and submit it to EPA by June 19, 1989.

The 1996 Amendments to the Safe Drinking Water Act established another program for states, the Source Water Assessment Program. The key elements of this new program (source area delineation, contaminant inventory, and vulnerability assessment) are also elements of a WellHead Protection Program. States are required to submit a program to EPA within eighteen months of EPA publishing guidance (scheduled for August 1997). After EPA has approved a State Source Water Assessment Program, the State will have two years to complete the assessment.

In California, development of the a WellHead Protection Program is being coordinated by the Department of Health Services, Drinking Water Program (DHS). The Department has responsibility for regulating all public water systems in the state. DHS, with the encouragement and support of EPA, chose to take the lead in

wellhead protection in California as a logical part of the Drinking Water Program's purpose of ensuring safe drinking water.

Need to state that governor has delegated authority for developing/implementing program to DHS, or that it is being submitted by the governor's office, with DHS responsible for carrying it out

WellHead Protection Programs Already in Place

At the national level, wellhead protection has been an active program for several years. As of 1996, forty-three states had WellHead Protection Programs approved by EPA. The remaining states (California, Alaska, Wyoming, Pennsylvania, Iowa, Florida and Virginia) have some elements of wellhead protection or source water protection in place.

Within California, wellhead protection has also been active. A number of communities and counties in California have wellhead protection programs in place, or are developing programs.

Work that Has Already Been Done in California

A number of government agencies, ground water management districts and others have already mapped ground water basins and sources of water supply within those basins. Some water suppliers, Regional Water Quality Control Boards, and the Department of Health Services, Drinking Water Program have previously identified potential sources of contamination to water supplies.

In effect since January 1993 is AB 3030, the Groundwater Management Act. This act allows a local water agency or group of agencies make their own ground water management plan according to their own requirements and gives them the power to raise funds to run it. A WellHead Protection Program is an allowable element of an AB 3030 Groundwater Management Plan. Approximately _____ AB 3030 plans have been adopted throughout the state.

As part of California's surface water treatment regulations, water systems that use surface water for a drinking water supply were required to complete a watershed sanitary survey. This survey included the determination of watershed boundaries and identification of potential sources of contamination. Completion of the survey was required by January 1, 1996, and updates are required every five years. To date, almost all large water systems (over 1,000 service connections) have completed the survey.

DHS AB 1803 vulnerability assessments

State Board' Watershed Initiative or 319 work or reports???

Other programs in CA that may have inventoried contaminants?

Summary of the California WellHead Protection Program

California has developed a wellhead protection program that meets the requirements of the Safe Drinking Water Act. The plan consists primarily of a set of guidelines for local community wellhead protection programs, with minimum criteria and suggested or required methods for program components. Details of local programs are not presented in this report. Descriptions of state responsibilities and actions are included.

It is proposed that adopting complete wellhead protection programs will be voluntary for water suppliers and local communities. However, because it is mandatory for the state to fulfill the requirements of the Source Water Assessment Program, it is anticipated that water suppliers will be required to perform the delineation.

contaminant inventory, and vulnerability assessment of their sources. The state is currently researching methods for assisting water suppliers with this work.

The state could require the water suppliers to delineate, inventory contaminants and assess vulnerability in order to obtain or continue chemical monitoring waivers. Existing regulations describe the vulnerability assessment process that is required for waivers. Virtually all water suppliers have some kind of monitoring waiver at present. DHS could encourage the development of complete wellhead protection programs through the annual inspection process. DHS annual inspection reports would note whether a WHP program is in place, and recommend the development if one is not in place. Any water systems with sources that have detected a regulated or unregulated chemical would be required to complete a WHPA delineation and a contaminant inventory.

All new ground water sources will be required to delineate a WHPA and conduct a contaminant inventory prior to DHS approval and permitting of the new source.

The Drinking Water Program will offer technical assistance, some potential funding for WHPP activities, and support for local programs. The WHPP coordinator will assist with delineations of wellhead protection areas and contaminant assessments, provide reference information and resources, and speak to community groups and leaders.

Suggested Steps For Developing Local WellHead Protection Programs

- Establish a local advisory committee
- Gather hydrogeologic and other relevant data
- Determine initial or preliminary wellhead protection areas for all wells
- Conduct an initial contaminant source inventory
- Assess vulnerability to contaminants based on hydrogeologic conditions and nature of contaminants
- Prioritize the wells that need to be studied more closely based on vulnerability
- Establish a wellhead protection program, including all program elements
- Determine refined wellhead protection areas
- Conduct detailed contaminant inventories
- Implement the wellhead protection program

Elements of the California WellHead Protection Program

Although the law requires that every State WellHead Protection Program contain specific elements, EPA recognizes that States should be allowed flexibility to tailor Program details to best suit their individual needs and circumstances. The California WellHead Protection Program includes the following elements, which fulfills the requirements of the Safe Drinking Water Act:

Roles and Duties of State Agencies *(Not included in this copy)*

The roles and duties of State agencies, local government entities, and public water suppliers are described with respect to the development and implementation of WHP programs.

WellHead Protection Area Delineations *(Not included in this copy)*

The plan specifies procedures for delineating wellhead protection areas (WHPAs) for each well. WHPAs must be delineated based on reasonably available hydrogeologic information on ground water flow, recharge and discharge, and other information the State deems necessary.

Inventory of Source Contaminants within WellHead Protection Areas *(Not included in this copy)*

The plan specifies methods for identifying sources of contamination within each WHPA, including all potential man-made sources that may have adverse effects upon health.

Assess Vulnerability of Water Supply to Contamination *(Not included in this copy)*

The plan describes procedures for determining the susceptibility of a water supply to contamination from a contaminant source within the protection area.

Management Strategies for WellHead Protection Areas

The plan describes state actions to support local entities in developing wellhead protection programs. The plan also identifies management approaches that can be used to protect the water supply within WHPAs from contaminants. These approaches may include, as appropriate, technical assistance, financial assistance, implementation of control measures, education, training and demonstration projects.

Contingency Planning for Drinking Water Supplies

The plan includes criteria for developing contingency plans indicating the location and provision of alternate drinking water supplies for each public water system in the event of well or wellfield contamination.

Siting of New Wells

The plan includes criteria and/or procedures for properly locating new wells to maximize yield and minimize potential contamination.

Public Participation *(Not included in this copy)*

The plan describes the State's efforts to ensure public participation in the development of the WHP program.

The following chapters of this report describe each of the program elements.

Who Do I Contact To Find Out More?

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California WellHead Protection Program

Management Strategies for WellHead Protection Areas

State Actions

need to insert here state actions for

- *technical assistance*
- *financial assistance*
- *training*
- *education*
- *demonstration projects*

Local Actions

After identifying protection areas and potential contaminant sources, the local community or water supplier needs to develop a management strategy for protecting the water supply. These activities are accomplished at the local level, and may affect agencies, districts or other communities besides the community served by the water supply. The cooperation of the entire community is vital for wellhead protection management strategies to work.

There are both non-regulatory and regulatory management strategies that can be effective as part of a wellhead protection program. The easiest ones to implement are non-regulatory, and they may be very successful. If, however, as a result of the source contaminant inventory and vulnerability assessment, a community determines that the water supply is at high risk of contamination, then more restrictive regulatory methods may be necessary to ensure protection of the water supply.

Potential management strategies are listed below. Additional details are available in other literature, please refer to the list in the _____.

Regulatory

Zoning

Overlay Ground water Protection Districts
Prohibition of Various Land Uses
Special Permitting
Large-Lot Zoning
Transfer of Development Rights
Cluster/PUD Design
Growth Controls/Timing
Performance Standards

Subdivision Control

Drainage Requirements

Health Regulations

Underground Fuel Storage Systems
Privately Owned Small Wastewater Treatment Plants
Septic Cleaner Ban
Septic System Upgrades

Toxic and Hazardous Materials Handling Regulations
Private Well Protection

Non-Regulatory

Land Transfer and Voluntary Restrictions

Sale/Donation

Conservation Easements

Limited Development

Other

Monitoring

Contingency Plans

Hazardous Waste Collection

Public Education

Legislative

Regional Wellhead Protection Area Districts

Land Banking

California WellHead Protection Program

Contingency Planning for Drinking Water Supplies

Contingency planning to protect ground water supplies is a required element of a WellHead Protection Program. It is also required by the Safe Drinking Water Act (SDWA) and the Emergency Planning and Community Right-to-Know Act of 1986, enacted as Title III of the Superfund Amendments and Re-authorization Act (SARA).

Local governments are typically given responsibility for implementing components of a state wellhead protection program. While program requirements may vary, each public water supplier in a state must provide a contingency plan to locate and provide alternate drinking water supplies in the event of well or wellfield contamination. A contingency plan should not be limited to planning for alternative supplies; it should be used to identify and to prevent both physical and operational threats from contaminating or closing a public supply well.

As a minimum, the California WellHead Protection Program should set some minimum components for local contingency plans. This is to ensure adequate planning, encourage reliability and consistency, and to create uniform response protocol.

Minimum Components of Local Contingency Plans**Assess The Ability Of The Water System To Function With The Loss Of The Largest Well Or Wellfield**

The water purveyor should identify the maximum water system capacity in relation to source, distribution system, and water rights or other restrictions. Re-evaluate this capacity with the loss of the largest well or wellfield.

Develop a plan for alternate water supplies

Determine both short term and long term supplies, the additional capacity that would be provided, and the associated costs. Consider such alternatives as: expanding existing sources, identifying existing and potential interties with other public water systems, developing new sources, and installing treatment on sources not currently used because of water quality problems.

Develop a Spill/Incident Response Plan

Using the results of the contaminant source inventory, a response plan should be developed with local emergency responders. Emergency response actions to be taken should consider protection of the water supply. For example, chemical spills within the wellhead protection area should be soaked up with absorbent materials rather than being washed away to drainage systems. Similarly, in the event of a fire it may be best to allow certain facilities to burn rather than have contaminated runoff that could pollute the community water supply.

The requirement for a contingency plan could be made a condition of a public water system's water supply permit.

Contingency Planning at the State Level

Contingency planning at the state level is also an important component of the State WellHead Protection Program. The state should develop a plan (or utilize an existing one) that identifies state roles, responsibilities, and resources. A State Contingency Plan provides the overall framework for state and local responses. The State plan should integrate other state and federal programs, and provide direction for local plans.

Activities in the Development of a State Contingency Plan

- Assess the characteristics of water systems statewide
- Assess the vulnerability of ground water supplies statewide
- Review existing State emergency response plans
- Assess water supply replacement options statewide
- Evaluate the State's technical, logistical, and financial resources to support local response activities
- Develop guidance and standards to direct local plan development
- Identify future steps that should be taken to prevent /mitigate future disruptions, and improve the State's ability to respond to major supply disruptions
- Organize a process for reviewing and updating the plan.

The State Contingency Plan should be developed after the adoption of the State WellHead Protection Program.

In addition to the SDWA, Title III of SARA establishes an emergency network to plan for and respond to emergency releases of hazardous chemicals. The emphasis on contingency planning under SARA is devoted exclusively to hazardous chemical spills, versus protection of ground water supplies from a range of threats. The emergency network established under SARA may be used and supplemented when developing a ground water supply contingency plan.

Find out more about what the state already has

California WellHead Protection Program

Siting of New Wells

The San Bernardino office already uses a policy entitled "Guidelines for the Protection of Domestic Water Supply Wells from Sources of Contamination or Pollution" dated March 1986. This is a good starting point and could be modified to add

- *Proposed revisions to California Waterworks Standards*
- *California Well Standards*
- *Local Well Ordinances*
- *WellHead Protection:*

New wells must have wellhead protection areas identified

New wells must have contaminant inventory and vulnerability

New wells must have description of wellhead management activities